

**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF WISCONSIN**

HYDRO-THERMAL CORPORATION,

PLAINTIFF,

V.

CASE NO. 07-C-918

**PRO-SONIX, LLC AND
BRUCE A. CINCOTTA,**

DEFENDANTS.

**DECISION AND ORDER DENYING DEFENDANTS' MOTION FOR
SUMMARY JUDGMENT**

I. Procedural History

On October 12, 2007, Hydro-Thermal Corp. filed a complaint alleging that Pro-Sonix, LLC and Bruce A. Cincotta ("Cincotta") (referred to here collectively as "Pro-Sonix") infringed on its patent, United States Letters Patent No. 6,082,712 ("the '712 patent"), for a "Direct Contact Steam Injection Heater." (Docket No. 1.) Although this initial complaint alleged infringement of other patents, the complaint was subsequently amended and now alleges only the infringement of the '712 patent. (Docket No. 52.)

On April 29, 2009, this court conducted a hearing pursuant to Markman v. Westview Instruments, Inc., 517 U.S. 370 (1996). Prior to this hearing, the parties submitted briefs outlining their respective positions. (Docket Nos. 53 (defendants' initial brief); 54 (Affidavit of Roger Pettit in support of Defendants' Markman Brief); 55 (plaintiff's initial brief); 56 (Declaration of David G. Hanson); 58 (defendants' response); 60 (plaintiff's response); 61 (Declaration of David G. Hanson)). On September 9, 2009, the court issued its claim construction order. (Docket No. 64.)

The plaintiff initially identified the following claims as being in need of construction by the court: “combining region,” “coaxial channel,” “inlet portion,” “axial direction” and “flow area.” (See Docket No. 55 at 2-3.) However, there appeared to be no dispute as to the meaning of the claims “inlet portion” or “flow area” as the defendants’ brief and response were devoid of any discussion as to the meaning of these terms. Thus, the court did not discuss these terms. Additionally, the court noted that the parties’ briefs and the statements of counsel at the Markman hearing made clear that the construction of “coaxial channel” and “axial direction” depended upon the construction of the term “combining region.” Specifically, as framed by the parties, the issue came down to whether the combining region may be simply some area within the heater body or if it must be a separate and distinct structure.

The court construed the claims as follows:

“Combining region” is the area within the heater body, which may or may not be a structure separate from the heater body, where the fluid to be heated mixes with the high pressure steam.

“Coaxial channel” is located between the Mach diffuser and an inlet portion of the combining region of the heater body, and has a flow area substantially less than a flow area of a downstream portion of the combining region in which the injected steam condenses.

“Axial direction” is a direction related to, characterized, or forming an axis.

(Docket No. 64 at 10.)

On November 16, 2009, the defendants filed a motion for summary judgment. (Docket No. 67; brief in support, 68.) The plaintiff responded, (Docket No. 69), and the defendants replied, (Docket No. 76). The pleadings on this motion are closed and the matter is ready for resolution. All parties have previously consented to the full jurisdiction of a magistrate judge.

II. Summary Judgment Standard

A motion for summary judgment will be granted when there are no genuine issues as to material fact and the movant is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(c). As

provided under Rule 56(c), only “genuine” issues of “material” fact will defeat an otherwise “proper” motion for summary judgment. Celotex Corp. v. Catrett, 477 U.S. 317, 322 (1986). Material facts are those facts which, under the governing substantive law, might affect the outcome of the suit. Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 248 (1986). A dispute of such material facts is “genuine” if the evidence is such that a reasonable trier of fact could find in favor of the nonmoving party. Id.

The movant bears the burden to establish that there is no genuine issue of material fact and that he or she is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(c); Adickes v. S.H. Kress & Co., 398 U.S. 144, 159 (1970); see also Celotex Corp., 477 U.S. at 323. The moving party satisfies its burden by demonstrating “that there is an absence of evidence to support the nonmoving party’s case.” Celotex Corp., 477 U.S. at 325. Any doubt as to the existence of a genuine issue for trial is resolved against the moving party. Anderson, 477 U.S. at 255; Cain v. Lane, 857 F.2d 1139, 1142 (7th Cir. 1988); Spring v. Sheboygan Area School Dist., 865 F.2d 883, 886 (7th Cir. 1989). Further, “on summary judgment, a court can neither make a credibility determination nor choose between competing interests.” Sarsha v. Sears, Roebuck & Co., 3 F.3d 1035, 1041 (7th Cir. 1993).

If the moving party meets its burden, the nonmoving party then has the burden to present specific facts showing that there is a genuine issue of material fact. Matsushita Elec. Indus. Co., Ltd. v. Zenith Radio Corp., 475 U.S. 574, 586-87 (1986).

III. Analysis

The ‘712 patent refers to a device that heats liquids or slurries by injecting high velocity steam into the fluid. The fluid enters the heater body and the high pressure steam enters through a Mach diffuser. The steam then mixes with the liquid, thereby heating it, and the combined heated fluid exits the heater body.

Claim 1 states:

A direct contact steam injection heater comprising:

a heater body having a steam inlet, a liquid inlet, a combining region and a heated liquid discharge outlet;

the combining region having an inlet and an outlet located within the heater body in which steam and liquid are combined to generate heated liquid;

a Mach diffuser that receives the flow of steam into the heater body and discharges the steam into the liquid flowing through the combining region, wherein a coaxial channel is located between the Mach diffuser and an inlet portion of the combining region of the heater body and the Mach diffuser contains a plurality of steam diffusion holes through which the steam is discharged into the liquid flowing through the channel between the Mach diffuser and the inlet portion of the combining region; and

an adjustably positionable cover over the steam diffusion holes contained in the Mach diffuser that is movable relative to the Mach diffuser to adjustably expose one or more of the steam diffusion holes in the Mach diffuser and modulate the amount of steam discharged through the Mach diffuser into the liquid flowing through the combining region;

wherein:

the steam pressure upstream of the Mach diffuser is sufficient to create sonic choked flow conditions through the exposed diffusion holes through which steam is discharged from the Mach diffuser into the flow of liquid flowing through the channel between the Mach diffuser and the inlet portion of the combining region;

the coaxial channel has a flow area substantially less than a flow area of a downstream portion of the combining region in which the injected steam condenses; and

liquid flows through the inlet portion and the downstream portion of the combining region in an axial direction and steam flows in generally radial directions as the steam flows through the one or more steam diffusion holes in the Mach diffuser into the axial liquid flow through the channel between the Mach diffuser and the combining region of the heater body.

(Docket No. 54-2 at 7-8) (emphasis added.) The portion of the claim that is most relevant to the issues presently before the court is the last paragraph of the portion quoted above and specifically the italicized portions.

A. “Axial Direction”

As noted above, the term “axial direction” was subject to the court’s prior claim construction order. (Docket No. 64 at 9-10.) In their Markman brief, the defendants requested that the court issue an order “requiring literal interpretation of the axial flow limitation of claims 1 and 16; that is, permitting no range of equivalents as to that limitation.” (Docket No. 53 at 15.) In support of this request the defendants’ Markman brief presented many of the same arguments they present here regarding prosecution history estoppel as a bar to an infringement claim under the doctrine of equivalents. (Docket No. 53 at 11-15.) The court construed the term as “a direction related to, characterized, or forming an axis.” (Docket No. 64 at 10.)

In contending that prosecution history estoppel barred the plaintiff from proving infringement under the doctrine of equivalents, the defendants’ Markman brief read more like a motion for summary judgment. Now the defendants’ present summary judgment brief, wherein they contend that the plaintiff cannot prove literal infringement because the court should read the “axial direction” element of the claim as requiring *entirely* axial flow as soon as the liquid enters and continues through the channel between the Mach diffuser and the combining region of heater body, in many ways seems like an effort to take a second bite from the Markman apple.

If one were to read only the last paragraph of the portion of the claim quoted above, it might be reasonable to conclude that for there to be literal infringement, the flow over the Mach diffuser must be “entirely” axial. The argument could be made that if the patent sought to claim anything less than entirely axial flow, the claim would have used an adverb such as “predominantly” or “generally” to describe the flow, as was done with respect to the radial flow of steam from the Mach diffuser.

However, it is important to note that, as claims often are, claim 1 of the ‘712 patent is prefaced with the word “comprising.” When used in the patent context, “comprising” is a term that

is “inclusive or open-ended” and “is well understood to mean “including but not limited to” in that it “does not exclude additional unrecited elements or method steps.” Abbott Labs. v. Sandoz, Inc., 544 F.3d 1341, 1360 (Fed. Cir. 2008) (quoting CIAS, Inc. v. Alliance Gaming Corp., 504 F.3d 1356, 1360 (Fed. Cir. 2007); Georgia-Pacific Corp. v. United States Gypsum Co., 195 F.3d 1322, 1327-28 (Fed. Cir. 1999)). This is in contrast to the closed-ended, limited, and exclusive term “consisting of.” CIAS, Inc., 504 F.3d at 1361. Thus, when the term “comprising” is used in a claim, infringement cannot be avoided simply because the accused device has elements in addition to those recited in the claim. Stiftung v. Renishaw PLC, 945 F.2d 1173, 1178 (Fed. Cir. 1991). However, “[c]omprising,” while permitting additional elements not required by a claim, does not remove the limitations that are present.” Power Mosfet Techs., L.L.C. v. Siemens AG, 378 F.3d 1396, 1409 (Fed. Cir. 2004).

An exception to this general understanding of the word “comprising” is found when the patentee had “clear intent” to limit the scope of the claims. Scanner Techs. Corp. v. ICOS Vision Sys., N.V., 365 F.3d 1299, 1304-05 (Fed. Cir. 2004). For example, one way a patentee’s intent to limit the scope of the claims may be manifested is when “the claim is specific as to the number of elements . . . and adding elements eliminates an inherent feature . . . of the claim.” Insituform Techs., Inc. v. Cat Contracting, Inc., 99 F.3d 1098, 1106 (Fed. Cir. 1996). The defendants have failed to present any evidence that the presence of any other type of flow in addition to axial flow would eliminate an inherent feature of the claim, and thus the court finds this limited exception to be inapplicable.

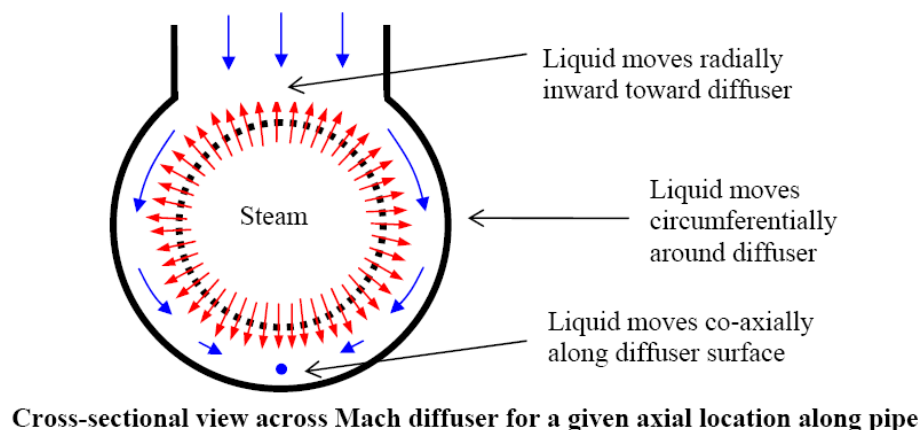
It is the conclusion of the court that as a consequence of the use of the open-ended term “comprising” to preface Claim 1, the “axial direction” limitation is a necessary element of the claim but the claim is not limited to only axial flow. Accordingly, the court rejects the defendants’ contention that the ‘712 patent requires *entirely* axial flow from the point the liquid passes through

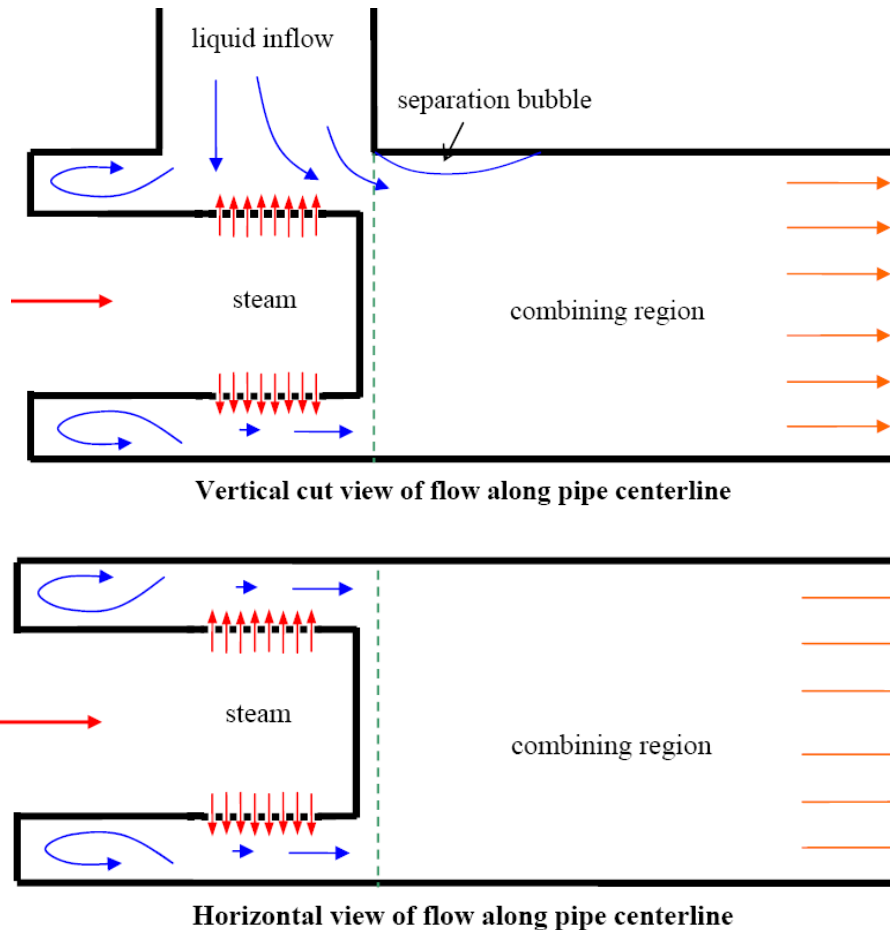
the inlet and continues through the channel between the Mach diffuser and the combining region of heater body. The court shall now turn to the question of infringement.

B. Literal Infringement

There are two ways a product may be found to infringe upon a patent. The first is literal infringement where “each and every claim limitation [is] present in the accused product.” Abraxis Bioscience, Inc. v. Mayne Pharma Inc., 467 F.3d 1370, 1378 (Fed. Cir. 2006). The second is infringement under the doctrine of equivalents where “[a]n accused device that ‘performs substantially the same function in substantially the same way to obtain the same result’ as the patented invention may infringe under this doctrine.” Id. at 1379 (quoting Graver Tank & Mfg. Co. v. Linde Air Prods. Co., 339 U.S. 605, 608 (1950)).

The defendants contend that the plaintiff cannot prove literal infringement because the plaintiff’s own expert, Dr. Eric Loth examined an allegedly infringing product of the defendants and noted that in that product the flow is initially radial, then becomes circumferential as the liquid spills around the diffuser, and then opposite the inlet, when essentially the two sides of the circumferential spillover converge, the flow will become axial. (Docket No. 68-9 at 5.) This is depicted in the following diagrams from Dr. Loth’s expert report:





(Docket No. 68-9 at 6.)

Thus, the defendants contend that because the flow over the Mach diffuser in the product depicted above is not entirely axial, but rather is radial and circumferential before becoming axial, the plaintiff cannot prove literal infringement. The plaintiff responds, in part, that the patent does not require entirely axial flow but merely flow that is axial at some point over the Mach diffuser.

(Docket No. 63 at 18-19.)

As noted above, the court rejects the defendants' proposed construction of "axial direction." The "axial direction" limitation is a necessary element of the claim, but the claim is not limited to entirely axial flow. This means that if the liquid flows at some point through the inlet portion and the downstream portion of the combining region in a radial, circumferential, or any other direction,

the jury may still find literal infringement, upon proof that all other elements of the claim are present in the allegedly infringing device, provided the flow is also axial.

Further, the defendants' contentions regarding prosecution history estoppel need not be considered in regard to literal infringement because, although there is some confusion on this issue, see Chisum on Patents § 18.05[4], it is generally understood, and the defendants acknowledged, (Docket No. 53 at 6), that prosecution history estoppel is relevant only to a claim of infringement under the doctrine of equivalents. See Loctite Corp. v. Ultraseal, Ltd., 781 F.2d 861, 870 (Fed. Cir. 1985) (overruled on other grounds).

Finally, it would be additionally inappropriate to grant the defendants' motion for summary judgment regarding literal infringement because the defendants acknowledge in a footnote in their brief, (Docket No. 68 at 3 fn.1), and in response to an additional proposed finding of fact submitted by the plaintiffs, (Docket No. 77 at 4, ¶¶12-13; see also Docket Nos. 68-9 at 7-8, 69 at 7-9), that the device depicted in the diagrams above and discussed in the defendants' briefs is not the only allegedly infringing product manufactured or offered for sale by Pro-Sonix. Thus, the question of literal infringement is one for the jury and the court shall deny the defendants' motion for summary judgment.

C. Doctrine of Equivalents

The court's conclusion that the flow need not be entirely axial for there to be literal infringement seems to moot the defendants' alternative arguments regarding the doctrine of equivalents. The plaintiff does not directly address this aspect of the defendants' brief and instead relies upon the broad contention that the patent does not require entirely axial flow. It should be noted that there is no indication that the plaintiff is contending that a device without *any* axial flow would infringe upon the '712 patent under the doctrine of equivalents. As such, the court need not consider whether alleged infringement under such a scenario would be barred by prosecution history estoppel.

IV. Conclusion

The '712 patent requires axial flow, but the flow need not be entirely axial for the jury to be able to find literal infringement. This conclusion moots the contentions raised by the defendants regarding alleged infringement under the doctrine of equivalents. The court need not consider the defendants' contentions regarding prosecution history estoppel because such argument would be relevant only to the now moot contentions regarding infringement under the doctrine of equivalents. Therefore, the court shall deny the defendants' motion for summary judgment.

IT IS THEREFORE ORDERED that the defendants' motion for summary judgment, (Docket No. 67), is **denied**.

The court will conduct a telephone conference with counsel for the parties on **February 16, 2010**, at **8:30 a.m.** to discuss further scheduling.

Dated at Milwaukee, Wisconsin this 5th day of February, 2010.

s/AARON E. GOODSTEIN
U.S. Magistrate Judge